## REMARKS

In the Office Action dated October 6, 2003, claims 1-17, 19, 20, 46, 47 and 58-66, in the above-identified U.S. patent application were rejected. Reconsideration of the rejections is respectfully requested in view of the above amendments and the following remarks. Claim 1-17, 19, 20, 46, 47 and 58-66 remain in this application, claims 18, 21-45 and 48-57 have been canceled.

Claims 1-17, 58 and 61 were rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1, 3, 4, 7, 8, 10 and 12 of application no. 09/463,402 (U.S. Patent No. 6,596,510). Claims 1-17, 19, 20, 46, 47 and 58-66 were rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1, 3, 5, 7, 8, 10 and 12 of application no. 09/463,402 (U.S. Patent No. 6,596,510) in view of Deblaere. Applicants respectfully point out that a two way obviousness determination [MPEP §804 II B 1 (b)] is required in the present situation since application no. 09/463,402 (which issued as U.S. Patent No. 6,596,510) is a later discovered and later filed improvement of the present application. Thus, the two inventions could not have been filed in one application. If the two way obviousness test is applied, it would need to be shown that the claims in each of the applications is obvious over the other. The office action argues that the claims in the present application are obvious over the improvement claims in

U.S. Patent No. 6,596,510 (i.e. one way obviousness test). Applicants respectfully contend that to maintain this rejection, the claims in U.S. Patent No. 6,596,510 must be shown to be obvious over the claims in the present application. The claims in U.S. Patent No. 6,596,510 require a signal sequence which codes for a peptide which brings about integration of the S-layer protein in the outer membrane of the host cell, integration of the S-layer protein in the cytoplasmic membrane of the host cell, secretion of the S-layer protein into the periplasmic space of the host cell or/and secretion into the media surrounding the host cell. It would not have been obvious in view of the present claims that an S-layer protein could be produced and directed into the outer membrane of the host cell or the cytoplasmic membrane of the host cell, or secreted into the periplasmic space of the host cell or/and the media surrounding the host cell. There is no suggestion in the present application that these specific parts of the cells can be targeted using signal sequences. Thus, the two way obviousness determination clearly not met. MPEP §804 II B 1 (b) states "Where a two-way obviousness determination is required, an obviousness-type double patenting rejection is appropriate only where each analysis compels a conclusion that the invention defined in the claims in issue is an obvious variation of the invention defined in a claim in the other application/patent". In *In re Braat*, 19 USPQ2d 1289 (Fed Cir 1991), the Federal Circuit found that where, through no fault of the applicant, the claims in a later filed application issue first, an obviousness type double patenting rejection is improper, in the absence of a two way obviousness

determination. Though the present application was refiled on January 16, 2002, applicants point out that in *General Foods Corp. v. Studiengesellschaft Kohle mbH*, 23 USPQ2d 1839 (Fed Cir. 1992), the court did not hold the patentee accountable for the delay even though a continuation in part application was filed after a notice of allowance was received. In view of the above discussion, applicants contend that a two way obviousness determination must be made and that the claims in the present application and the claims in U.S. Patent No. 6,596,510 do not meet the requirements of this determination. Therefore, applicants request that these rejections be withdrawn.

Claims 15, 62 and 63 were rejected under 35 USC §102(b) as anticipated by Kuen. Claims 15, 62 and 63 are directed to an isolated nucleic acid encoding a full-length, crystalline recombinant S-layer protein. Applicants point out that Kuen never isolated the full length nucleic acid sequence. He only predicted the sequence based on three overlapping fragments. Claim 15 is clearly directed to an "isolated" nucleic acid and claims 62 and 63 depend from claim 15. In other words, Kuen predicted the sequence, he did not isolate it. In view of the fact that Kuen never isolated a nucleic acid encoding a full-length, crystalline recombinant S-layer protein, applicants contend that claims 15, 62 and 63 are not anticipated by Kuen and request that this rejection be withdrawn.

Claim 66 was rejected under 35 USC §112, second paragraph as indefinite due to the language "within the scope of the degeneracy of the genetic code". Applicants respectfully contend that this language is well known in the art to mean

that the nucleic acid sequences encode the same amino acid sequence. However, in order to clarify this issue claim 66 has been amended to indicate that the sequences encode the same amino acid sequence.

Claims 59, 60, 62 and 63 were rejected under 35 USC §112, second paragraph, as indefinite due to the term "obtainable". Applicants point out that this language was deleted from these claims in the July 14, 2003 amendment and thus this rejection is moot.

Applicants respectfully submit that all of claims 1-17, 19, 20, 46, 47 and 58-66 are now in condition for allowance. If it is believed that the application is not in condition for allowance, it is respectfully requested that the undersigned attorney be contacted at the telephone number below.

In the event this paper is not considered to be timely filed, the Applicant respectfully petitions for an appropriate extension of time. Any fee for such an extension together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account No. 02-2135.

| **RESPECTFULLY SUBMITTED,** | | | | | |
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